

1 WHAT IS CLAIMED IS:

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Sub C1

1. A communication method for a radio LAN system providing communication at a first transmission rate, said method comprising the steps of:

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(a) time-divisionally distributing a first signal of said first transmission rate into n-1 second signals (n = 3, 4, ...);

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(b) respectively converting said n-1 second signals into n-1 third signals of a second transmission rate less than said first transmission rate; and

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(c) transmitting said n-1 third signals of said second transmission rate through radio transmission paths between n-1 radio base stations and a terminal station connected to at least one terminal unit.

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2. The method as claimed in claim 1, wherein said second transmission rate is $1/(n-1)$ of said first transmission rate.

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3. The method as claimed in claim 1, wherein:

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said radio LAN system further comprises at least one redundant radio base station n; and said method further comprises the steps of: (d) transmitting a fourth signal through a

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1 radio transmission path between said terminal station
and said at least one redundant radio base station n,
data of said fourth signal having a given relationship
with data in signals transmitted between at least k
5 (k≤(n-1)) radio base stations of said n-1 radio base
stations and said terminal station; and

(e) compensating, when at least one
transmission path between said at least k radio base
stations and said terminal station is interrupted,
10 data of the signal to be transmitted through an
interrupted transmission path based on said data of
said fourth signal transmitted between said at least
one redundant radio base station n and said terminal
station.

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4. The method as claimed in claim 3, wherein
20 said given relationship in said step (d) is that said
data of said fourth signal transmitted between said at
least one redundant radio base station n and said
terminal station is a summation of data of the signals
transmitted between said at least k radio base
25 stations and said terminal station for each given time
slot.

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5. The method as claimed in claim 1,
wherein:

said radio LAN system further comprises at
least one redundant radio base station n; and

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said method further comprises the steps of:

(f) monitoring interruption of transmission
paths between said n-1 radio base stations and said

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1 terminal station; and

(g) compensating, when one of said
transmission paths is interrupted, data of an
interrupted transmission path by transmitting said
5 data of the interrupted transmission path between said
at least one redundant radio base station n and said
terminal station.

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6. A communication apparatus for a radio LAN
system providing communication at a first transmission
rate, said apparatus comprising:

15 rate-conversion-and-distribution means for
time-divisionally distributing a first signal of said
first transmission rate into n-1 second signals ($n =$
3, 4, ...) and respectively converting said n-1 second
signals into n-1 third signals of a second
20 transmission rate less than said first transmission
rate; and

n-1 radio base stations transmitting said n-
1 third signals of said second transmission rate to a
terminal station connected to at least one terminal
25 unit through radio transmission paths.

30 7. The apparatus as claimed in claim 6,
wherein said second transmission rate is $1/(n-1)$ of
said first transmission rate.

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8. The apparatus as claimed in claim 6,

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1 said terminal station connected to at least one
terminal unit through radio transmission paths, said
terminal station comprising:
a receiver receiving said third signals of
5 said second transmission rate transmitted from said n-
1 radio base stations; and
rate-conversion-and-multiplex means for
converting and multiplexing received third signals of
said second transmission rate into signals of said
10 first transmission rate.

15 11. A terminal station used in a radio LAN
system having rate-conversion-and-distribution means
for time-divisionally distributing a first signal of a
first transmission rate into n-1 second signals (n =
3, 4, ...) and respectively converting said n-1 second
20 signals into n-1 third signals of a second
transmission rate less than said first transmission
rate, n-1 radio base stations transmitting said n-1
third signals of said second transmission rate to said
terminal station connected to at least one terminal
25 unit through radio transmission paths, at least one
first summation means for generating a fourth signal
by summing data of at least k ($k \leq (n-1)$) signals of
said n-1 third signals of said second transmission
rate for every timeslot, and at least one redundant
30 radio base station n transmitting said fourth signal
generated in said at least one first summation means
to said terminal station, said terminal station
comprising:

a receiver receiving said third signals of
35 said second transmission rate transmitted from said n-
1 radio base stations;

rate-conversion-and-multiplex means for

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- 1 converting and multiplexing received third signals of
said second transmission rate into signals of said
first transmission rate;
- line monitoring means for monitoring
- 5 interruption of transmission paths between said $n-1$ — 28
radio base stations and said terminal station;
- at least one second summation means, when at
least one of said transmission paths is interrupted,
for generating a fifth signal by summing data of every
- 10 timeslots of at least k signals of signals transmitted
from said $n-1$ radio base stations except for a signal
to be transmitted through an interrupted transmission
path;
- at least one subtraction means for
- 15 generating subtraction data between data of the signal
transmitted from said redundant radio base station n
and data of said fifth signal generated in said second
summation means; and
- switching means for providing said
- 20 subtraction data generated in said subtraction means
to said rate-conversion-and-multiplex means instead of
providing data of an interrupted signal detected in
said monitoring means;
- wherein even when at least one of signals
- 25 transmitted from said $n-1$ radio base stations is
interrupted, data of the interrupted signal is
compensated.

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12. A terminal station used in a radio LAN
system having rate-conversion-and-distribution means
for time-divisionally distributing a first signal of a
- 35 first transmission rate into $n-1$ second signals ($n =$
 $3, 4, \dots$) and respectively converting said $n-1$ second
signals into $n-1$ third signals of a second

1 transmission rate less than said first transmission
rate, n-1 radio base stations transmitting said n-1
third signals of the second transmission rate to said
terminal station connected to at least one terminal
5 unit through radio transmission paths, at least one
redundant radio base station n transmitting a signal
to said terminal station, first line monitoring means
for monitoring interruption of transmission paths
between said n-1 radio base stations and said terminal
10 station, and first switching means, when at least one
of said transmission paths is interrupted, for
forwarding a signal to be transmitted through an
interrupted transmission path to said at least one
redundant radio base station n; said terminal station
15 comprising:

a receiver receiving said third signals of
the second transmission rate transmitted from said n-1
radio base stations;

rate-conversion-and-multiplex means for
20 converting and multiplexing received third signals of
the second transmission rate into signals of said
first transmission rate;

second line monitoring means for monitoring
interruption of transmission paths between said n-1
25 radio base stations and said terminal station; and

second switching means, when at least one of
said transmission paths is interrupted, for providing
the signal transmitted from said redundant radio base
station to said rate-conversion-and-multiplex means
30 instead of providing a signal to be transmitted
through an interrupted transmission path;

wherein even when at least one of signals
transmitted from said n-1 radio base stations is
interrupted, data of the interrupted signal is
35 compensated.

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add C3
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